

We claim:

1. A coil-type magnetic medium read head having at least one core, the core substantially defining a core plane, and a Z thinness dimension perpendicular to the core plane, wherein the Z thinness dimension is between .26 inches and .020 inches.
- 5 2. The read head of claim 1 wherein the Z thinness dimension is between 0.10 inches and .020 inches.
3. The read head of claim 1 wherein the Z thinness dimension is approximately .049 inches.
4. The read head of claim 1 wherein the Z thinness dimension is approximately .020
- 10 10. inches.
5. A coil-type magnetic medium read head having at least one coil, the coil substantially defining a coil plane, and a Z thinness dimension perpendicular to the coil plane, wherein the Z thinness dimension is between .26 inches and .020 inches.
6. The read head of claim 5 wherein the Z thinness dimension is between 0.10 inches
- 15 15. and .020 inches.
7. The read head of claim 5 wherein the Z thinness dimension is approximately .049 inches.
8. The read head of claim 5 wherein the Z thinness dimension is approximately .020 inches.
- 20 20. 9. A thin coil-type magnetic medium read head for reading a magnetically coded medium having an X dimension parallel to a gap plane, a Y dimension parallel to the gap plane and perpendicular to the X dimension, and a Z dimension perpendicular to the gap plane and the X and Y dimensions, wherein the thinness aspect ratio of Z/X is less than 1/1 and the thinness aspect ratio of Z/Y is less than 1/1.
- 25 25. 10. The head of claim 9 wherein either the Z/X or the Z/Y thinness aspect ratio is less than 1/5.
11. The head of claim 9 wherein either the Z/X or the Z/Y thinness aspect ratio is less than 1/12.
12. The head of claim 9 wherein either the Z/X or the Z/Y thinness aspect ratio is less
- 30 30. than 1/30.
13. A thin coil-type magnetic medium read head wherein a gap plane is substantially parallel to a coil plane.
14. A thin coil-type magnetic medium read head wherein a gap plane is substantially parallel to a core plane.

15. A process for making a thin magnetic medium read head, the head having at least one coil therein, the coil defining a coil plane, comprising:

(a) loading a slot in a left bracket with a left core assembly and a slot in a right bracket with a right core assembly;

5 (b) bonding the left core assembly and the right core assembly to its respective bracket with a bonding agent;

(c) machining on the left bracket a left bonding surface proximate the slot therein, and on the right bracket a right bonding surface proximate the slot therein, whereby an edge of each core assembly in its respective slot is flush with its

10 respective bonding surface;

(d) positioning the left and right brackets with a foil placed between each bonding surface, and the left and right brackets being positioned such that the left core assembly is substantially co-planar with the right core assembly;

(e) bonding the bonding surfaces and foil together with a bonding agent to 15 create a unitized structure with sufficient pressure that the foil forms a gap between the left core assembly and the right core assembly substantially equal to the thickness of the foil; and

(f) machining a side of the unitized structure substantially parallel to a coil plane whereby a portion of the core assembly is exposed thus exposing the gap.

20 16. A process for making a plurality of thin magnetic medium read heads, each head having at least one coil therein, the coil defining a coil plane, comprising:

(a) loading each of a plurality of slots in a left bracket with a left dual core assembly, and a plurality of slots in a right bracket with a right dual core assembly;

(b) bonding the left dual core assemblies and the right dual core 25 assemblies to their respective brackets with a bonding agent;

(c) machining on the left bracket a left bonding surface proximate the slots therein, and on the right bracket a right bonding surface proximate the slots therein, whereby an edge of each left and right dual core assembly in its respective slot is flush with its respective bonding surface;

30 (d) positioning the left and right brackets with a foil placed between each bonding surface, and the left and right brackets being positioned such that each left dual core assembly is substantially co-planar with a corresponding right dual core assembly;

(e) bonding the left and right bonding surfaces and foil together with a 35 bonding agent to create a unitized structure with sufficient pressure that the foil forms

a plurality of gaps, each gap between the left dual core assembly and the right dual core assembly being substantially equal to the thickness of the foil;

(f) dividing the unitized structure into individual heads;

(g) machining a side of each head substantially parallel to a coil plane

5 whereby a portion of the left and right dual core assemblies therein are exposed, thus exposing one or more of the plurality of gaps.

17. A process for making a thin magnetic medium read head, the head having at least one core therein, the core defining a core plane, comprising:

10 (a) loading a slot in a left bracket with a left core assembly and a slot in a right bracket with a right core assembly;

(b) bonding the left core assembly and the right core assembly to its respective bracket with a bonding agent;

15 (c) machining on the left bracket a left bonding surface proximate the slot therein, and on the right bracket a right bonding surface proximate the slot therein, whereby an edge of each core assembly in its respective slot is flush with its respective bonding surface;

(d) positioning the left and right brackets with a foil placed between each bonding surface, and the left and right brackets being positioned such that the left core assembly is substantially co-planar with the right core assembly;

20 (e) bonding the bonding surfaces and foil together with a bonding agent to create a unitized structure with sufficient pressure that the foil forms a gap between the left core assembly and the right core assembly substantially equal to the thickness of the foil; and

25 (f) machining a side of the unitized structure substantially parallel to a core plane whereby a portion of the core assembly is exposed thus exposing the gap.

18. A process for making a plurality of thin magnetic medium read heads, each head having at least one core therein, the core defining a core plane, comprising:

30 (a) loading a plurality of slots in a left bracket with a left dual core assemblies, and a plurality of slots in a right bracket with a right dual core assemblies;

(b) bonding the left dual core assemblies and the right dual core assemblies to their respective bracket with a bonding agent;

35 (c) machining on the left bracket a left bonding surface proximate the slots therein, and on the right bracket a right bonding surface proximate the slots

therein, whereby an edge of each left and right dual core assembly in its respective slot is flush with its respective bonding surface;

5 (d) positioning the left and right brackets with a foil placed between each bonding surface, and the left and right brackets being positioned such that each left dual core assembly is substantially co-planar with the corresponding right dual core assembly;

10 (e) bonding the left and right bonding surfaces and foil together with a bonding agent to create a unitized structure with sufficient pressure that the foil forms a plurality of gaps, each gap between the left dual core assembly and the right dual core assembly being substantially equal to the thickness of the foil;

(f) dividing the unitized structure into individual heads;

(g) machining a side of the unitized structure parallel to a core plane whereby a portion of the left and right dual core assemblies therein are exposed, thus exposing one or more of the plurality of gaps.

15 19. A thin magnetic medium read head manufactured by a process comprising the steps in claim 15.

20. A thin magnetic medium read head manufactured by a process comprising the steps in claim 16.